

AUTOMATED TRACK INSPECTION PROGRAM

SUMMARY OF GEOMETRY VEHICLE MEASUREMENT CAPABILITIES

System	Measured Range	Speed Range (MPH)	Processing Mode		Laboratory Accuracy	Repeatability (inches)	
			Forward	Reverse		Mean	Standard Deviation
Distance (miles)	9,999.9 (optical)	0-125+	<u>Yes</u>	<u>Yes</u>	5 feet/mile	N/A	N/A
Speed	0-200 mph	0-125+	Yes	Yes	2% but not < 2mph	N/A	N/A
Location (ALD)	Magnetic	0-125+	Yes	Yes	100% Detection	N/A	N/A
Gage (normal rail Section)	55 ½ to 58 ½"	0-125+	Yes	Yes	1/32 Inch	1/32	1/16
Left or Right Curvature	± 20 Degrees	4-125+	Yes	Yes	0.2 Degrees/100' chord	0.01 Degrees/100' chord	0.15 Degrees/100' chord
Crosslevel	Up to 10 Inches	0-125+	Yes	Yes	1/16 Inch	1/32	1/16
Profile (Inertial)	± 5 inch	5-125+	Yes	Yes	1/16 Inch	1/32	1/16
Alignment	± 6.25 inch	15-125+	Yes	Yes	1/8 Inch	1/32	1/8
Warp	± 20 inch	4-125+	Yes	Yes	1/8 Inch	N/A	N/A
Limiting Speed	0-150 mph	4-125+	Yes	Yes	N/A	N/A	N/A
Ride Quality	± .25g	0-125+	Yes	Yes	1/64 g's	N/A	N/A
DGPS †	Long-360° Lat ± 90°	0-125+	Yes	Yes	3-10 Feet	N/A	5-Feet

Table 10

Notes: Worst-case repeatability characteristics based upon comparisons between 20 mph and 70 mph's tests in the same and opposite directions on Class 4 track from test sequence performed December 2000.

N/A = Not Applicable

† = Differential Global Positioning System